

WHAT IS CLAIMED IS:

1. A method for calculating dynamic burst length, for providing a data processing system through a dynamic burst length calculating system, so as to increase usage efficiency of a main memory unit bus and protect operation of the data processing system against effects from abnormal data, the dynamic burst length calculating system comprising a CPU (central processing unit) for providing interoperability between components and modules of the dynamic burst length calculating system, the main memory unit bus for transferring data between the CPU and a plurality of memory units of the burst dynamic length calculating system, a network communication system connecting module for sending and receiving data for the dynamic burst length calculating system, and a main memory unit for storing data of the data processing system for being processed by the CPU; the method comprising the steps of:

(1) when a data byte is written to a buffering memory unit, adding a write-in index address in a register by one; when a data byte is read out from the buffering memory unit, adding a read-out index address in the register by one; then proceeding to step (2);

(2) determining via a valid data calculating module whether the number of valid packet data in the buffering memory unit exceeds a preset main memory unit bus requesting threshold; if no, repeating step (2); if yes, determining via a main memory bus requesting module whether the packet data length exceeds preset capacity of packet data storage in the main memory unit, wherein if yes, a usage request is no longer sent to the main memory unit bus until the packet data finish, or if no, the main memory unit bus requesting module sends the usage request to the main memory unit bus; then proceeding to step (3);

(3) determining via a data length calculating module whether a sending data byte is the end of the packet data; if yes, calculating the length of this data byte; and

(4) having a burst length determining module compare the valid data byte length, the packet data length and the preset burst length in the buffering memory unit, and select the least one as a burst length value.

2. The method as claimed in claim 1, wherein the network communication system connecting module comprises:

the buffering memory unit controlled by the network communication system connecting module for data access of the buffering memory unit, and for providing a specific area for holding data to be sent or received;

the valid data calculating module controlled by the network communication system connecting module and for calculating the number of valid data in the buffering memory unit for the dynamic burst length calculating system;

the data length calculating module controlled by the network communication system connecting module, and for calculating the length of a data byte waiting to be transferred for the dynamic burst length calculating system;

the main memory unit bus requesting module controlled by the network communication system connecting module, and for determining whether the number of valid data in the buffering memory unit calculated by the valid data calculating module exceeds a preset value and for determining whether the data length exceeds preset capacity of data storage in the main memory unit, so as to send the usage request to the main memory unit bus in case of the data length not exceeding the preset capacity of data storage; and

the burst length determining module controlled by the network communication system connecting module, and for determining the length of burst data byte for the dynamic burst length calculating system.

3. The method as claimed in claim 1, wherein in step (3) if the sending data byte is not the end of the packet data, a data end index address is set to infinity.

4. The method as claimed in claim 1, in step (3), after the length of the sending data byte is calculated, further comprising a step of:

(3-1) adding a clock delay to the end of the packet data to distinguish different packets.

5. The method as claimed in claim 1, wherein the network communication system connecting module is a network interface card.

6. The method as claimed in claim 5, wherein the network communication system connecting module is connected to a network communication system.

7. The method as claimed in claim 6, wherein the network communication system is a Local Area Network (LAN).

8. The method as claimed in claim 7, wherein the LAN has Ethernet system architecture or Fast Ethernet system architecture.

9. A dynamic burst length calculating system for providing a data processing system through a dynamic burst length calculating method, so as to increase usage efficiency of a main memory unit bus and protect operation of the data processing system against effects from abnormal data; the dynamic burst length calculating system comprising:

a CPU (central processing unit) for providing interoperability between components and modules of the dynamic burst length calculating system;

a main memory unit bus for providing a hardware path for transferring data between the CPU and a plurality of memory units of the burst dynamic length calculating system;

a network communication system connecting module for sending and receiving data for the dynamic burst length calculating system; and

a main memory unit connected to the CPU and for storing data of the data processing system for being processed by the CPU.

10. The system as claimed in claim 9, wherein the network communication system connecting module comprises:

a buffering memory unit controlled by the network communication system connecting module for data access of the buffering memory unit, and for providing a specific area for holding data to be sent or received;

a valid data calculating module controlled by the network communication system connecting module and for calculating the number of valid data in the buffering memory unit for the dynamic burst length calculating system;

a data length calculating module controlled by the network communication system connecting module, and for calculating the length of a data byte waiting to be transferred for the dynamic burst length calculating system;

a main memory unit bus requesting module controlled by the network communication system connecting module, and for determining whether the number of valid data in the buffering memory unit calculated by the valid data calculating module exceeds a preset value and for determining whether the data length exceeds preset capacity of data storage in the main memory unit, so as to send the usage request to the main memory unit bus in case of the data length not exceeding the preset capacity of data storage; and

a burst length determining module controlled by the network communication system connecting module, and for determining the length of burst data byte for the dynamic burst length calculating system.

11. The system as claimed in claim 9, wherein the network communication system connecting module is a network interface card.

12. The system as claimed in claim 11, wherein the network communication system connecting module is connected to a network communication system.

13. The system as claimed in claim 12, wherein the network communication system is a Local Area Network (LAN).

14. The system as claimed in claim 13, wherein the LAN has Ethernet system architecture or Fast Ethernet system architecture.